

### DETAILED ACTION

Claims 1-6 are pending in the instant application.

#### ***Previous Claim Rejections - 35 USC § 103***

Claims 1-2 were rejected in the previous action under 35 U.S.C. 103(a) as being unpatentable over Kawamura et al. (WO/00/14174 A1).

Applicant has traversed the rejection that Kawamura et al. do not adequately suggest the compounds, that the Kawamura et al. compounds do not emit blue light, and that compounds that are comparable to those of Kawamura et al. do not emit blue light and are poor in heat resistance.

This is not found to be persuasive. Firstly, Kawamura et al. envisioned compounds that would meet the proviso set out in the claims. The proviso in the claims is that at least one of Ar<sup>3</sup>-Ar<sup>8</sup> have 10-18 nuclear carbon atoms. Kawamura et al. set that their instant Ar<sup>1</sup> through Ar<sup>6</sup> are aryl groups having from 6 to 24 nucleus carbon atoms, R<sup>1</sup> and R<sup>2</sup> are hydrogen atoms, and X is a single bond. See page 3. Kawamura et al. teach compounds that separately teach the proviso, but do not meet the conditions of Ar<sup>1</sup> or Ar<sup>2</sup> of the instant application to have 10-18 nuclear carbon atoms as stated in the previous action. Kawamura et al. clearly envisions the modifications to the compounds by claiming a larger range of carbon atoms in the aryl groups to stay within the inventive concept. The instant compounds are clearly within the inventive concept of Kawamura et al., and are therefore adequately suggested.

The question then turns to whether the emission of blue light and improved heat resistance is enough to establish non-obviousness. Apart from

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the suggestion by Kawamura et al. to change some phenyl groups to naphthyl groups, both the instant compounds and the Kawamura et al. compounds have a large hole mobility. In fact, the instantly claimed compounds are claimed not only as light emissive but as a component in a hole injecting layer. In the Examiner's view, the suggestion of the compounds and their shared property as having a large hole mobility outweigh the emission of blue light and improved heat resistance. Therefore, the rejection is maintained.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

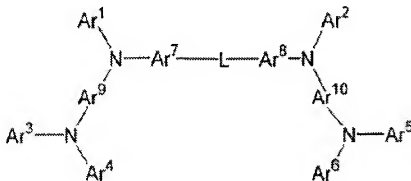
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Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-2 rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura et al. (WO/00/14174 A1).

According to MPEP 2111.02, "If the body of a claim fully and intrinsically sets forth all of the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction. *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999)."

The instant invention cites a compound of the formula



where: L is a

single bond, Ar<sup>1</sup> though Ar<sup>2</sup> are condensed aryl groups having 10-18 nuclear

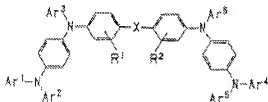
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carbon atoms, Ar<sup>3</sup> to Ar<sup>6</sup> are aryl groups having 6 to 18 nuclear carbon atoms;

and Ar<sup>7</sup> to Ar<sup>10</sup> are arylene groups having 6 to 18 nuclear carbon atoms.

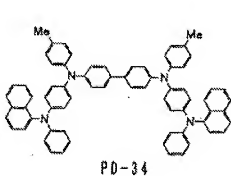
Determination of the scope and content of the prior art (MPEP §2141.01)

Kawamura et al. teach a compound of formula

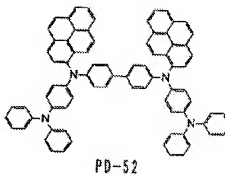


with substitutions as defined. See page

3. Kawamura et al. also teach the particular compounds:



and



See pages 25 and 29.

Ascertainment of the difference between the prior art and the claims (MPEP

§2141.02)

Kawamura et al. do not teach specifically the proviso at the end of claim 1 that at least one of Ar<sup>3</sup> to Ar<sup>6</sup> is a condensed aryl group having 10 to 18 nuclear carbon atoms or that the compounds emit blue light.

Finding of prima facie obviousness—rational and motivation (MPEP §2142-2413)

Kawamura et al. suggest the compound of the instant invention where Ar<sup>1</sup> through Ar<sup>6</sup> are aryl groups having from 6 to 24 nucleus carbon atoms, R<sup>1</sup> and R<sup>2</sup> are hydrogen atoms, and X is a single bond. See page 3. Also, by virtue that individual compounds teach separately the conditions of the proviso, it is within the purview of one of ordinary skill to modify the structure of compound PD-34 cited above to include the aryl groups designated in the Ar<sup>3</sup> and Ar<sup>6</sup> positions (Ar<sup>1</sup> and Ar<sup>2</sup> in the instant case) from compound PD-52. Apart from a showing of unexpected results, the person of ordinary skill would deem that the disclosure of Kawamura et al. renders the instant claims obvious. Additionally, the condition that the compounds emit blue light is in the preamble of the claim. Since the suggestion of Kawamura et al. meets the structural components of the claim, it also meets the preamble of the claim.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention was made to follow the synthetic scheme of Kawamura et al. to make the claimed invention. The motivation to do so is provided by Kawamura et al. Kawamura et al. teach the use of the compounds as a electroluminescent material with a small ionization potential and exhibits a large hole mobility when it is used as a layer or a zone. See page 2.

Thus, the claimed invention as a whole was *prima facie* obviousness over the combined teachings of the prior art.

### **Conclusion**

Claims 1-2 are rejected.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph R. Kosack whose telephone number is (571)272-5575. The examiner can normally be reached on M-Th 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph McKane can be reached on (571)-272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/REI-TSANG SHIAO /  
Primary Examiner, Art Unit 1626

/Joseph R Kosack/  
Examiner, Art Unit 1626